

EFFICIENT HANDLING OF A LARGE REGISTER FILE FOR CONTEXT SWITCHING

Marc Tremblay and William Joy

ABSTRACT OF THE DISCLOSURE

5 A processor including a large register file utilizes a dirty bit storage coupled to
the register file and a dirty bit logic that controls resetting of the dirty bit storage. The
dirty bit logic determines whether a register or group of registers in the register file
has been written since the process was loaded or the context was last restored and, if
written generates a value in the dirty bit storage that designates the written condition
10 of the register or group of registers. When the context is next saved, the dirty bit logic
saves a particular register or group of registers when the dirty bit storage indicates that
a register or group of registers was written. If the register or group of registers was
not written, the context is switched without saving the register or group of registers.
The dirty bit storage is initialized when a process is loaded or the context changes.